SECTION 7
Commercial and Industrial Issues

7.1 IDENTIFYING PROBLEMS

The research for and development of this Watershed Management Plan were funded by a grant under Section 319 of the Clean Water Act. This federal program, which is administered by the State, is focused on nonpoint source pollution and the associated planning and projects necessary to correct problems associated with nonpoint source pollution.

While all issues involving both point source pollution and nonpoint source pollution should be addressed collectively in a true watershed approach, the funding and overall scope of this Watershed Plan were focused on nonpoint source pollution issues in unregulated geographical areas and at unregulated locations. Therefore, regulated entities such as certain industries, municipalities, and wastewater treatment plants, are not covered in-depth in this Plan. Additionally, the water quality sampling effort was not designed to identify the myriad of potential pollutants (chemicals, fuels, etc.) that could be associated with certain industries.

With this limitation considered, this section attempts to briefly discuss issues related to industry and commercial issues without becoming too involved with the requirements of existing state permits and pending regulatory programs. The intent is to allow for some exposure to these issues and ensure the consideration of such issues in the encompassing watershed planning process.

7.1.1 What Was Already Known

What was actually known with regard to commercial and industrial issues is that: (1) Commercial development and industrial growth is helpful to the local economy, and (2) both facility site design and activities associated with commercial and industrial impacts can, if not well-managed or properly designed, have detrimental impacts on water quality.

It was also understood that Morgan County and the City of Martinsville had, in recent years seen an above average rate of development and land use change from agricultural and other open land to both commercial and industrial use.

Figure 7.2: Example of recent industry development in Morgan County. Such development is indicative of a healthy economy.

Since many industries are permitted to discharge process wastewaters into municipal sanitary sewer systems, wastewater treatment plants are discussed briefly in this Section. Specifically, industrial dischargers are, under certain conditions, permitted to the sanitary sewer system if they comply with what is called "industrial pretreatment."

Discharges from industrial activities as well as site design for commercial land use are regulated by the state, however review of the individual permits, inspection reports, design, and other information related to such facilities was beyond the scope of this Watershed Management Plan.

7.1.2 What Was Learned During the Process

Over the course of the watershed study, some interesting facts related to industry and commercial issues were learned:

(1) New water quality problems specifically related to industry in this subject area were not identified since the type of data

that was collected by the coordination team is generally not the type of data that would indicate problems related to industrial processes. In addition, as discussed in Section 1 and Appendix B of this Plan, sample locations were focused on the tributaries where industry is much less prevalent.

(2) **Monrovia Wastewater**: The Town of Monrovia's new Wastewater Treatment plant had only recently been constructed. Its discharge is in the Sycamore Creek Watershed. Surface water samples were taken downstream of this location, and details of location, process, and findings are discussed in Appendix B of this Plan. The plant serves 140 residents.

(3) **Martinsville Wastewater**: The discharge from the Martinsville Wastewater treatment plant is directly into the White River, southwest of Martinsville in the very southern reaches of the subject watershed. Sampling by the watershed coordination team did not sample below this point, since the sampling focused on tributaries to White River.

(4) **Hazardous Materials**: According to the Community Right to Know database, there are 5 operations in the watershed that involve the handling hazardous materials. These locations are shown in figure 7.2. These facilities are required to provide the local emergency response authority (LEPC and fire department) of the type and quantity of chemicals they use.

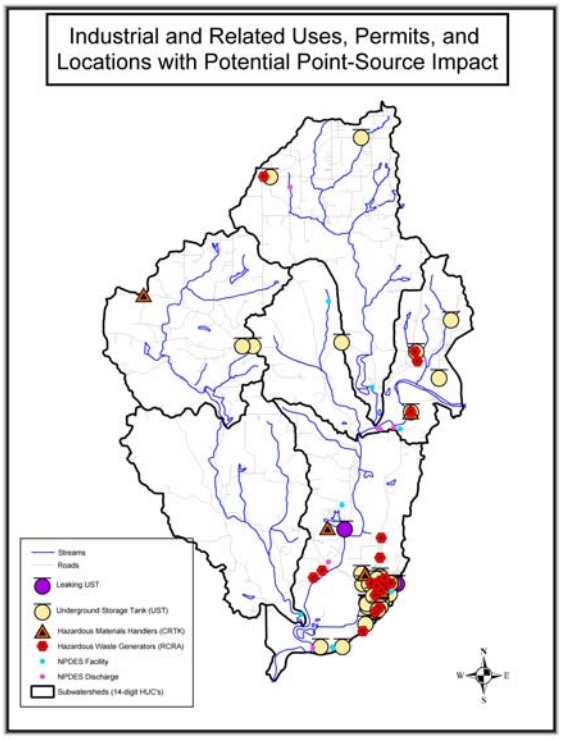
(5) **Hazardous Waste**: According to the Resource Conservation and Recovery Act database, there are 72 operations in the watershed that generate and/or store hazardous waste. These locations are also shown in figure 7.2.

(6) **Storage Tanks**: There are 166 underground storage tanks (USTs) registered with IDEM in the watershed. Of these 166 tanks, 41 are on record as leaking underground storage tanks (LUSTs). Most tanks store petroleum products. In addition to those tanks registered with the state and listed on the UST and LUST databases found at IDEM, there are likely other USTs and LUSTs located in the watershed that were never registered with the state.

(7) **Commercial Development:** Land use change from agriculture and other open lands to industrial and commercial use is continuing at what appears to be an increasing rate. Large parking areas for restaurants, auto dealers, "strip centers", and other retail use are appearing in areas most evident around Martinsville and Monrovia.

(8) **I-69**: Indiana's Governor announced in early 2003 that the new Interstate 69 extension south of Indianapolis to Evansville will follow much of S.R. 37 through Martinsville, but will also involve new terrain and expansion in many locations very near the watershed in Morgan County. This project is expected to drive an increased rate of growth and development including industry and commercial land uses in the area.

Figure 7.2:



7.1.2.1 Water Quality

As previously mentioned, the field sampling and monitoring program was not designed to specifically identify problems related to industrial discharges. The sampling *of E. coli* bacteria was one potential indicator of problems related to incomplete sewage treatment prior to wastewater treatment plant discharge. However, the presence of *E. coli* could also be caused by leaking septic systems, wildlife, and livestock facilities.

7.1.3 Causes or Probable Causes of Impairments or Threats to Water Quality

There are many potential causes of impairments to water quality in this subject watershed. Most notably, the *E. coli* bacteria has been identified by both IDEM and the coordination team sampling results, as an impairment and/or threat in the tributaries. Additionally, mercury, PCBs, and heavy sediment loads have all been identified by IDEM in surface waters within the watershed.

7.1.3.1 Industrial Causes

Pollutants identified in surface waters, such as petroleum byproducts and other chemicals can be harmful to both humans and wildlife. Often these pollutants exist in the water or sediment because of historical, and occasionally current industrial discharges that are either poorly managed or not permitted by the State. Since the Clean Water Act of 1972, most of these industrial pollutants from point source discharges have been addressed through permitting and enforcement. However, there remains a legacy of such pollution, such as Polychlorinated Bipheonols (PCBs) or mercury found in streambed sediments. Both of these pollutants are found in the White River, according to State water quality data and the Section 303(d) list of impaired waters. Industrial discharges, leaking underground storage tanks (LUSTs), and chemical spills are typical causes. Much of this pollution is likely to have traveled downstream from the industry-heavy City of Indianapolis. Other probable causes are (or were at one time) located in the Martinsville area.

7.1.3.2 Commercial Development

Rapid and unmanaged commercial development poses two primary risks to water quality. They are: soil sediment entering streams caused by erosion from poorly managed construction and development (usually temporary); and increased pollution runoff of petroleum products (motor oil and gasoline), antifreeze, zinc from rooftops, and other typical waste products that accumulate on concrete, asphalt, and rooftops (long-term). The cause of the latter of the two risks is the increase of impervious surface area from what was once farmland, forested land, or other unpaved property. Impervious surfaces allow for the collection of chemicals from such sources as automobiles, increase surface water runoff directly to surface waters, and reduce the groundwater recharge necessary for adequate groundwater supplies.

7.1.4 Sources or Probable Sources of Pollutants or Conditions Causing Water Quality Impairments

Historical industrial discharges, unpermitted or poorly managed current discharges, leaking underground storage tanks, spills, and poorly planned development are the primary sources of the pollutants described in this section. Specific sources and their locations are not discussed in this Plan.

7.1.5 Prioritization

From a geographical perspective, the Land Use Committee prioritized the developing areas around the City of Martinsville and the Town of Monrovia. These locations are the most likely to experience growth and development in the coming 5 to 10 years. This is due to their proximity to Indianapolis and it's associated population expansion as well as the proposed I-69 corridor extension.

7.2 GOALS AND DECISIONS

7.2.1 Goals for Improvement and Protection:

Primary Goal #4 of this Watershed Management Plan, as outlined in Section 1 of this document is, "to the greatest extent possible and with existing and potential resources, improve and protect water quality in the watershed with the intention, where applicable and appropriate, to achieve and maintain state water quality standards." In order to achieve Primary Goal #4 of this Watershed Management Plan, the following objectives related to commercial and industrial issues have been established by the Watershed Initiative:

Objective #7-1

Reduce the likelyhood of petroleum and chemical spills, increase the preparedness for spills, and respond with knowledge and full understanding of sources of spills of chemicals and other petroleum products into surface waters.

Action 7-1

Through watershed teaming, discussed in Section 9 of this Plan, ensure consistent interaction and information sharing between the LEPC, all local fire departments, the SWCD, and County Health Department regarding the locations and types of hazardous materials and hazardous waste operations dicussed in this Section. The proximity to local waters, water resource sensitivity, soil types, and slopes should be understood and maintained by both parties.

Action 7-2

Ensure that appropriate Spill Prevention Control and Countermeasure Plans (SPCCP) are avialable at all facilities that handle hazardous materials and petroleum products. Ensure through inspection and educational processes, that employees at those facilities are trained to implement the SPCCP.

Action 7-3

For facilities that are not regulated per their industrial classification to maintain an SPCCP, ensure through the consituent requirements of Storm Water Phase 2 (see Section 9), all other facilities are trained and understand their potential for impact on surface waters in the event of a spill or release of chemicals.

Action 7-4

Upon acquisition and establishment of GIS in the county (see Sections 8 and 9), ensure that all locations where hazardous materials and wastes are kept are located and displayed in GIS. Up-to-date lists of materials (i.e., Material Safety Data Sheets) and typical waste streams should be linked to the geographical location to ensure regional, upstream and downstream knowledge in the event that indications of a pollutant are found in surface waters (i.e., evidence of a spill or fish kill).

Objective #7-2

Through watershed teaming (see Section 9) establish cross-training programs and procedures between local agencies to expand the understanding and inspection capabilities between local agencies whose activities involve water quality protection.

Action 7-5

Cross-train between the SWCD and the Martinsville and Monrovia wastewaster pretreatment coordinators so that there is a comprehensvie understanding among both regarding:

- Chemicals used in certain industries and how they are treated prior to final discharge both to and from the treatement plant.
- Sensitivity of waters and soils downtream of the industries using chemicals (in the case of a spill) and downstream of the treatment plants in the event of a bypass or an unauthorized pollutant discharge to the plant (similar to the City of Anderson/Guide Corporation discharge event that resulted in a large fish kill in White River in 1999).

Action 7-6
Cross train between the SWCD, the LEPC, local drinking water utilities, the Morgan County Health Department, and the local fire departments regarding spill response capabilities, priorities, and processes. The SWCD should provide information regarding sensitive areas, soils, slopes, and already impaired areas of surface waters. Through this process, the local water utilities should help educate all parties about wellfield protection areas, and other geographical issues of public health concerns. This will provide opportunties for the fire department to enhance their spill response priorities.

Objective #7-3
Ensure that the increasing land use change in the watershed from farmland and forested land to commercial areas with impervious surfaces results in minimal impact to water quality.

Action 7-7
As is proposed in Section 8 of this document, *Development, Planning and Zoning*, the County Development Department should be encouraged to utilize the Long Term Hydrologic Impact Assessment (LTHIA) software, available from Purdue University. The development department can then run screening scenarios of proposed land use and zoning changes. Results of the LTHIA screening should be turned over to the SWCD prior to any Zoning Board decisions. The SWCD will have the opportunity to recommend mitigation measures to the Zoning Board for any anticipated water quality impacts. It will be necessary to acquire and begin consistent use of GIS software (see Sections 8 and 9) in order to utilize LTHIA.

7.2.2 Management Measures
In order to accomplish the objectives and initiate the actions discussed in this Section, it will first be necessary to design and implement an intergovernmental teaming process, such as the watershed teaming process described in Section 9. The opportunities to share information, co-educate, and cross-train will result.

Figure 7.2: An example of a commercial complex where natural features were integrated with proper storm water management. This commercial site design by Ratio Architects and JF New provides many natural features to minimize the impacts of commercial development.

7.2.3 Loads or Contributions for the Management Measures
While the ultimate intent of this section is to reduce the pollution load to receiving waters, it is not realistically possible to calculate what reductions will occur as a result of the actions proposed in this section. Therefore, no such calculations have been made. However, with regard to *Action 7-7*, the potential pollutant load contribution of each proposed land use change can be calculated for individual proposed land use changes. This would occur on a site-by-site basis.

7.2.5 Resources
Resources available or needed for achieving goals and objectives discussed in this section are divided into human resources, and funding resources:

7.2.5.1 Human Resources
Currently, the Soil and Water Conservation District staff, IDNR staff, NRCS staff, and voluntary Supervisors would likely be available for participation in the regional teaming and cross-training. Additionally, the Watershed Initiative Land Use Committee, a strictly voluntary group of

stakeholders who have been meeting for 2 years, have committed themselves to remain available participants in watershed education and to assist and help direct many of these activities. Most of these committee members have indicated a willingness to provide themselves as part of a speakers bureau to help perpetuate the water quality message to the public.

7.2.5.2 Funding Resources

The primary funding necessary to implement the actions of this Section will include those costs necessary for the acquisition of GIS (which serves and supports many actions in this Plan). The remaining efforts in this Section constituted some minor staff scheduling changes, which should not be costly.

Sources of funding will be necessary for software, equipment, and minor overhead costs. Funding resources that will be pursued (see Section 10 for funding for specific actions) will include: Section 319 watershed management funding from US EPA through IDEM; similar programs such as Section 104(b)(3) and Section 205(j) funding; local county and city appropriations Public Works and related budgets; Lake and River Enhancement (LARE); and private donations.

7.2.6 Legal Matters:

Legal matters related to this section are more appropriately addressed directly between the regulated (i.e., permit holders) and the regulator (i.e., IDEM). As discussed in this Section 9 and Appendix C of this Plan, Wasteload Allocations necessary to meet TMDL limitations will be addressed through legal discharge permitting methods.

7.3 MEASURING PROGRESS

7.3.1 Indicators Selected to Determine Progress

Periodically, the SWCD and/or the participants in the Watershed Initiative will have to measure the progress of the actions proposed in this section by making record of each of the actions, such as cross training, and re-visiting the value and success of the program will be necessary.

Indicators of success will included:

- Increased knowledge between departments regarding spill response, sensitive areas, and pretreatment inspection processes.
- Better preparation for spills.
- Fewer spills based upon records available at IDEM and local LEPC.
- More thorough evaluation of property design for land use change, with a reduction in the rate of increase of impervious surface areas.

7.3.2 Re-Evaluation of Plan

The Morgan County Soil and Water Conservation District will be responsible for the regular review and update of this Watershed Management Plan. This Plan should be evaluated on an annual basis to document and celebrate progress; assess effectiveness of efforts; modify activities, if needed, to better target water quality issues; and keep implementation of the Plan on track. The Plan should be revised as needed to better meet the needs of the watershed stakeholders and meet water quality goals.

A summary of the actions proposed for this plan and a detailed list of potential funding sources can be found in Section 10 of this Plan.